YAKUTAT
Yearly Evaluation
December 2010

1. Review the wildlife history for the past year.

Strike History Summary November 2009 to December 2010

Incident Date	Airport	State	Operator	Aircraft	Damage Code*	Species**
11-08-2010	YAKUTAT ARPT (PAYA)	AK	ALASKA AIRLINES	B-737	N	JUVENILE BALD EAGLE

A juvenile bald eagle struck Alaska Airlines flight 61 on takeoff. The aircraft was not damaged but it did have to overfly its next stop, Cordova, because maintenance resources were not available. The Sitka Raptor Center was called and they found a person to capture the injured eagle. The eagle was transported for rehabilitation at the Sitka Raptor Center. Of all entities, Alaska Airlines transported the injured bird.

Yakutat has had 9 aircraft strikes since 2000, which averages .90 strikes per year in a ten year period. There appears to be an upward trend, but much of that may be from increased reporting. The record number of strikes was in 2004 when there were four separate bird strikes reported. There were no bird strikes in 2009. The Yakutat Airport is built on wetlands and surrounded by fish streams. In addition to geese, eagles, and birds, there are beavers and coyotes.

2. Comparison of Wildlife Strike History with Summaries of Control Efforts.

3. Compare wildlife use on the airfield before and after habitat modifications.

FAA AIRPORTS APPROVAL
AAL DATE 8/25/11

From Yakutat WHMP 4.2: Habitat Management Project Timetable

MANAGEMENT CATEGORY	YAK HABITAT MANAGEMENT PROJECTS (Chapter references)	TARGET DATE	DATE COMPLETED	PERMIT(S) REQUIRED?
A	(1) Establish new ground cover in grass infields (4.5.1)	2004	2004 and ongoing maintenance	No
B	(2) Fill in low-lying areas and ditches which do not serve water drainage functions (4.4.2)	2013		Yes
B	(3) Remove beaver dams (4.4.2)	Ongoing	2008	Yes
B	(4) Remove trees and snags within 500' of Runway 11/29 centerline (4.5.3)	2014		Yes
C	(5) Enforce proper refuse containment (4.3.3)	Ongoing	Ongoing	No
C	(6) Culvert installations (4.4.2)	2005	2007	Yes

1. The 2004 Runway Project established a gravel ground cover in the infields. Natural grasses have started to sprout up through the gravel but we have an ongoing process to mow the grass down.
2. There are hold-ups with environmental permits because many of these ditches are fish streams.
3. In 2009 we saw no beaver activity on the airport. It appears that our beaver hazing, culling, and dam destruction has convinced the beavers to move elsewhere.
4. Trees have been felled and removed from the southeast corner of the runway intersections. Removal of other trees and brush is an ongoing effort as there is still much to remove.
5. This continues to be an ongoing issue for which the airport managers are vigilant.
6. No change.

FAA AIRPORTS APPROVAL
[redacted] DATE 8/25/11

YAKUTAT
Yearly Evaluation
November 2009

1. Review the wildlife history for the past year.

Strike History Summary July 2008 to November 2009

Incident Date	Airport	State	Aircraft	R'way	Damage Code*	Species**
09-17-2008	YAKUTAT ARPT (PAYA)	AK	B-737-400	11	S	HERRING GULL

INDIVIDUAL STRIKE REPORT

Incident Date: 09-17-2008	**Operator ID:** ASA	**Operator:** ALASKA AIRLINES		**ACCESS Ref Nr:** 148534
Aircraft Type: B-737-400	**A/C Make:** 148	**A/C Model:** 32	**Eng Make:** 10	**Eng Model:** 01
Registration: N762AS	**Time of Day:** DAY	**Time:** 18:00	**Runway:** 11	**Damage Code*:** S
Flight Nr: 66	**Height:** 0	**Speed:**	**Location Enroute:**	
Airport Code: PAYA	**Airport:** YAKUTAT ARPT		**State:** AK	**FAA Region:** AAL

	Struck	Damaged	Struck	Damaged
Radome	☐	☐	Propellor	☐	☐
Windshield	☐	☐	Wing/Rotor	☐	☐
Nose	☐	☐	Fuselage	☐	☐
Engine #1	■	■	Ldg Gear	☐	☐
Engine #2	■	■	Tail	☐	☐
Engine #3	☐	☐	Lights	☐	☐
Engine #4	☐	☐	Other	☐	☐
Birds Ingested	■		Other (Specify):		

Phase of Flt: LANDING ROLL	**Effect on Flight:** NONE	**Sky:** SOME CLOUD	**Precipitation:** NONE
	Other Effect:	**Nr Injuries:**	**Nr Fatalities:**
Wildlife/Bird Remains:			

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■ Collected ☐ Sent To Smithsonian				
Species ID: NE101	**Species**:** HERRING GULL	**Nr Seen:** 2-10	**Nr Struck:** 2-10	**Size:** MEDIUM
Pilot Warned: Y	**Remarks:** REPLACED A FEW FAN BLADES.			
Aircraft Out of Service (Hrs): 24	**Original Cost of Repairs (US$):**	**Original Other Costs (US$):**		
Comments: TWO xxxx-x (xxxx-x-xx-xxxxxx & Rx)				
Reported By: DELETED		**Title:** DELETED		**Date:**
Source: FAA FORM 5200-7-E		**Person Reporting:** AIRPORT OPERATIONS		**Last Updated:** 02-10-2009

Yakutat has averaged .60 strikes per year since the first reported strike in 1991. This September 2008 an Alaska Airlines jet struck a flock of herring gulls, causing damage to the aircraft engines.

2. Comparison of Wildlife Strike History with Summaries of Control Efforts.

3. Compare wildlife use on the airfield before and after habitat modifications.

From Yakutat WHMP 4.2: Habitat Management Project Timetable

MANAGEMENT CATEGORY	YAK HABITAT MANAGEMENT PROJECTS (Chapter references)	TARGET DATE	DATE COMPLETED	PERMIT(S) REQUIRED?
A	(1) Establish new ground cover in grass infields (4.5.1)	2004	2004 and ongoing maintenance	No
B	(2) Fill in low-lying areas and ditches which do not serve water drainage functions (4.4.2)	2005		Yes
B	(3) Remove beaver dams (4.4.2)	Ongoing	2008	Yes
B	(4) Remove trees and snags within 500' of Runway 11/29 centerline (4.5.3)	2010		Yes
C	(5) Enforce proper refuse containment (4.3.3)	Ongoing	Ongoing	No
C	(6) Culvert installations (4.4.2)	2005	2007	Yes

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1. The 2004 Runway Project established a gravel ground cover in the infields. Natural grasses have started to sprout up through the gravel but we have an ongoing process to mow the grass down.
2. No change.
3. In 2009 we saw no beaver activity on the airport. It appears that our beaver hazing, culling, and dam destruction has convinced the beavers to move elsewhere.
4. Trees have been felled and removed from the southeast corner of the runway intersections. Low level brush has still to be cleaned. Removal of other trees and brush is an ongoing effort.
5. This continues to be an ongoing issue for which the airport managers are vigilant.
6. No change.

FAA AIRPORTS APPROVAL
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YAKUTAT
Yearly Evaluation
November 2008

1. Review the wildlife history for the past year.

Strike History Summary July 2007 to November 2008

Incident Date	Airport	State	Aircraft	R'way	Damage Code*	Species**
07-18-2007	YAKUTAT ARPT (PAYA)	AK	LEARJET-35	11	M	BALD EAGLE

FAA NATIONAL WILDLIFE STRIKE DATABASE
INDIVIDUAL STRIKE REPORT (Short Form A)

Incident Date: 07-18-2007	**Time of Day:** DUSK	**Time:** 20:00	**Damage Code*:** M	**Ref Nr:** 138375
Aircraft Type: LEARJET-35	**Runway:** 11	**Height:** 2	**Speed:** 125	
Airport Code: PAYA	**Airport:** YAKUTAT ARPT			
Phase of Flt: APPROACH	**Effect on Flight:** NONE	**Other Effect:**	**Sky:** OVERCAST	**Precipitation:** NONE
Species:** BALD EAGLE	**Nr Seen:** 1	**Nr Struck:** 1	**Size:** LARGE	

Remarks:
SML DENT ON LE OF L WING. TAXIED TO PARKING FOR INSPN. DMG FOUND TO BE WITHIN TOLERANCE TO RETURN A/C TO SERVICE. BIRD REMAINS DISCARDED BY AIRPORT DOT AND IMMEDIATE NOTICE GIVE TO JUNEAU FSS.

Yakutat has averaged .61 strikes per year since the first reported strike in 1991. In July of 2007 a Medivac flight struck a bald eagle and the bird was euthanized. Please see last year's report in regards to the details and actions taken. This September 2008 an Alaska Airlines jet struck a flock of herring gulls, causing damage to the aircraft engines. See Section A of this report.

2. Comparison of Wildlife Strike History with Summaries of Control Efforts.

3. Compare wildlife use on the airfield before and after habitat modifications.

From Yakutat WHMP 4.2: Habitat Management Project Timetable

MANAGEMENT CATEGORY	YAK HABITAT MANAGEMENT PROJECTS (Chapter references)	TARGET DATE	DATE COMPLETED	PERMIT(S) REQUIRED?
A	(1) Establish new ground cover in grass infields (4.5.1)	2004	2004 and ongoing maintenance	No
B	(2) Fill in low-lying areas and ditches which do not serve water drainage	2005		Yes

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DGW AK 05 DATE 6-7-09

	functions (4.4.2)			
B	(3) Remove beaver dams (4.4.2)	Ongoing	Ongoing	Yes
B	(4) Remove trees and snags within 500' of Runway 11/29 centerline (4.5.3)	2010		Yes
C	(5) Enforce proper refuse containment (4.3.3)	Ongoing	Ongoing	No
C	(6) Culvert installations (4.4.2)	2005	2007	Yes

1. The 2004 Runway Project established a gravel ground cover in the infields. Natural grasses have started to sprout up through the gravel but we have an ongoing process to mow the grass down.
2. No change.
3. In the past, we had a take permit from the State of Alaska Fish and Game. As beavers are taken, they have moved to other parts of the airport. We will renew our beaver take permit with the State of Alaska in an ongoing effort to make the airport property less inviting to the beavers. Some beaver dams were removed as each dam removal requires separate permit.
4. Trees have been felled and removed from the southeast corner of the runway intersections. Low level brush has still to be cleaned. Felled trees and low level brush will be cleaned from other parts of the airport.
5. This continues to be an ongoing issue for which the airport managers are vigilant.
6. No change.

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DGW MLOS DATE 6-7-09

CFR Title 14 FAR Part 139.337

CODES OF FEDERAL REGULATIONS - AVIATION
Wildlife hazard management.

(a) Each certificate holder (*holder of the airport operating certificate*) shall provide for the conduct of an ecological study, acceptable to the Administrator (*FAA*), when any of the following events occur on or near the airport:

(1) An air carrier aircraft experiences a multiple bird strike or engine ingestion.

(2) An air carrier aircraft experiences a damaging collision with wildlife other than birds.

(3) Wildlife of a size or in numbers capable of causing an event described in paragraph (a)(1) or (2) of this section is observed to have access to any airport flight pattern or movement area.

(b) The study required in paragraph (a) of this section shall contain at least the following:

(1) Analysis of the events which prompted the study.

(2) Identification of the species, numbers, locations, local movements, and daily and seasonal occurrences of wildlife observed.

(3) Identification and location of features on and near the airport that attract wildlife.

(4) Description of the wildlife hazard to air carrier operations.

(c) The study required by paragraph (a) of this section shall be submitted to the Administrator, who determines whether or not there is a need for a wildlife hazard management plan. In reaching this determination, the Administrator considers-

(1) The ecological study;

(2) The aeronautical activity at the airport;

(3) The views of the certificate holder;

(4) The views of the airport users; and

(5) Any other factors bearing on the matter of which the Administrator is aware.

(d) When the Administrator determines that a wildlife hazard management plan is needed, the certificate holder shall formulate and implement a plan using the ecological study as a basis. The plan shall-

(1) Be submitted to, and approved by, the Administrator prior to implementation; and

(2) Provide measures to alleviate or eliminate wildlife hazards to air carrier operations.

(e) The plan shall include at least the following:

(1) The persons who have the authority and responsibility for implementing the plan.

(2) Priorities for needed habitat modification and changes in land use identified in the ecological study, with target dates for completion.

(3) Requirements for and, where applicable, copies of local, state, and Federal wildlife control permits.

(4) Identification of resources to be provided by the certificate holder for implementation of the plan.

(5) Procedures to be followed during air carrier operations, including at least-

(I) Assignment of personnel responsibilities for implementing the procedures;

(ii) Conduct of physical inspections of the movement area and other areas critical to wildlife hazard management sufficiently in advance of air carrier operations to allow time for wildlife controls to be effective;

(iii) Wildlife control measures; and

(iv) Communication between the wildlife control personnel and any air traffic control tower in operation at the airport.

(6) Periodic evaluation and review of the wildlife hazard management plan for-

(I) Effectiveness in dealing with the wildlife hazard; and

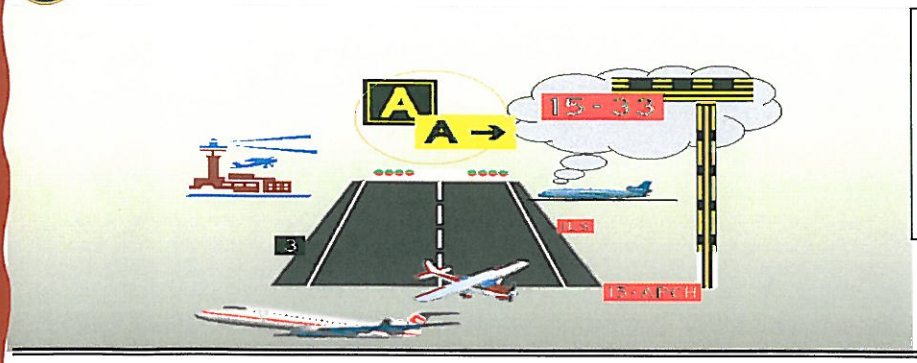
(ii) Indications that the existence of the wildlife hazard, as previously described in the ecological study, should be reevaluated.

(7) A training program to provide airport personnel with the knowledge and skills needed to carry out the wildlife hazard management plan required by (d) of this section.

(f) Notwithstanding the other requirements of this section, each certificate holder shall take immediate measures to alleviate wildlife hazards whenever they are detected.

(g) FAA Advisory Circulars in the 150 series contain standards and procedures for wildlife hazard management at airports which are acceptable to the Administrator.

AIRPORT CERTIFICATION INFORMATION BULLETIN



Eastern Region
Federal Aviation Administration
Airports Division, AEA-620
Safety & Standards Branch
1 Aviation Plaza,
Jamaica NY 11434

AEA-05-11
1/14/11

Bulletin: 2011-05
Subject: Reducing and Preventing Hazardous Wildlife Attraction on Airports
Issue Date: January 14, 2011
Revised Date:

Prepared by: Jayme Patrick, Airport Certification Safety Inspector/ Wildlife Biologist
Phone/ email: 718-553-3091/ jayme.patrick@faa.gov
Contact: Jayme Patrick

Application: This bulletin is being sent to Part 139 Airport Certificate holders

Background: This bulletin summarizes the guidance of Advisory Circular 150/5200-33B, Hazardous wildlife attractants on and near airports. This Bulletin discusses land uses **on airport property** and supplements Cert Bulletin AEA-04-10 which discusses land uses off of airport property.

Action Required: Please distribute to all personnel who access movement areas and safety areas and perform duties in compliance with the requirements of the Airport Certification Manual Wildlife Management section. Also, ensure this guidance is being followed.

Airport wetland modification and mitigation
(Reference AC 33B, Section 2-4, pages 8-9)

For the wetland being modified

- Ensure the airport's WHMP includes monitoring and management of the wetland

For selection of mitigation site

FAA's preferred option: Purchase of credits in mitigation banks greater than five miles from the farthest edge of the airport's AOA.

- If this is not acceptable to permitting agencies,
  - Airports must inform them that use of mitigation sites or banks on-site or within 5,000/ 10,000 feet will not be approved unless a special ecological function (maintaining habitat essential to Federally-listed endangered or threatened

species; or maintaining unique wetland functions (e.g., aquifer recharge, flood control, filtration) exists.

- **For Part 139 airports, notify the Airport Inspector,** who will coordinate with the Eastern Region Wildlife Biologist, and provide verification that the conditions for exception exist at the site as documented by the US Fish and Wildlife Service, Army Corps of Engineers, or appropriate State agency. Next steps will be to conduct a Wildlife Hazard Site Visit and the Airports Division will use the outcome to determine further procedures.

Airport storm water management
(Reference AC 33B, Section 2-3, pages 5-7)

Existing basins and ponds:
Preferred: modify to drain within 48 hours and remain totally dry between rainfalls

- When this is not possible, exclusion devices (balls, wires, etc) can be used as long as they would not interfere with water rescue. **Part 139 airports must coordinate with their Airport Inspector** who will work with the Eastern Region Wildlife Biologist**;** pond modification and monitoring must be approved in the Wildlife Hazard Management Plan or procedures.
- When constant water flow is anticipated or if portions will not dry, there must be concrete or paved pad and/or ditch/swale constructed in the bottom to prevent vegetation that may provide nesting habitat.

New ponds and basins:
Preferred: underground systems
When this is not possible, ponds/ basins must be:

- Designed, engineered, and maintained to drain in a maximum of 48 hours and remain totally dry between rainfalls
- Narrow, linear in shape with steep rip-rep sides; no vegetation in or around pond/ basin
- Placed outside of the airport's AOA. Ideally placed at least approx 2 miles away from other open water sources and not across runways from other open water sources.
- If placement outside of AOA is not possible, exclusion devices (cover, netting, balls, wires, etc) must be used. They must be selected and installed in a manner that would not interfere with water rescue. **Part 139 airports must coordinate with their Airport Inspector** who will work with the Eastern Region Wildlife Biologist**;** pond modification and monitoring must be approved in the Wildlife Hazard Management Plan or procedures.

Wastewater discharge and sludge disposal:
Not allowed on airport property; this includes use of wastewater for irrigation purposes.

Agricultural activities on airport property
(Reference AC 33B, Section 2-6, pages 9-10)

Agricultural crops

- Allowed on airport property only if financially necessary and no alternatives are available; this includes airport-owned property outside of the AOA. Agriculture must be outside of the distances given in Advisory Circular 150/5300-13, Airport Design, Appendix 17. Monitoring and management of wildlife attraction to agriculture on airport-owned land must be documented in the approved Wildlife Hazard Management Plan or procedures.

Livestock grazing

- Not allowed on airport property.

Aquaculture

- Not allowed on airport property unless inside of fully-enclosed buildings.

Landscaping and landscape maintenance
(Reference AC 33B, Section 2-7, pages 10-11)

Aesthetic landscaping

- Only allowed outside of AOA
- Plans should be reviewed by a qualified airport wildlife biologist
- Should be continuously monitored for wildlife attraction or activity

Turfgrass

- New plantings should not contain millet, ryegrass, other large-seed-producing varieties or clover
- Existing plantings containing millet, ryegrass, other large-seed-producing varieties or clover should be managed in such a manner as to prevent plant maturation and seed production
- Airports should develop turf mowing and management plans, with the assistance of a qualified airport wildlife biologist if necessary, to minimize attraction of hazardous wildlife

Composting
(Reference AC 33B, Section 2-1e, page 4)

Not allowed on airport property.

- On-airport disposal of composting by-products is not allowed.

Other land uses
(Reference AC 33B, Item 5 Background, page ii)

Constructed or natural areas—such as poorly drained locations, roosting habitats on buildings, or surface mining—can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape. Even small facilities, such as fast food restaurants, taxicab staging areas, rental car facilities, aircraft viewing areas, and public parks, can produce substantial attractions for hazardous wildlife. Airports should review planning procedures to ensure these attractants are not created, and should review existing attractants to develop any warranted wildlife control procedures.

Documentation

(Reference AC 33B, Sections 3-4 and 3-5, pages 13-14)

Wildlife Hazard Assessments must evaluate hazardous wildlife attractants and provide recommendations to address them. The Wildlife Hazard Management Plan or procedures must identify hazardous wildlife attractants on or near the airport, including those listed in this bulletin, and the appropriate wildlife hazard management techniques to minimize the wildlife hazard. It must also prioritize the management measures. This documentation progress on implementing management measures will be verified during annual Part 139 Inspections.

Attachments: none

U.S. Department
of Transportation

Federal Aviation Administration

Advisory Circular

Subject: HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS	**Date:** 8/28/2007	**AC No:** 150/5200-33B
	Initiated by: AAS-300	**Change:**

1. PURPOSE. This Advisory Circular (AC) provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants. Appendix 1 provides definitions of terms used in this AC.

2. APPLICABILITY. The Federal Aviation Administration (FAA) recommends that public-use airport operators implement the standards and practices contained in this AC. The holders of Airport Operating Certificates issued under Title 14, Code of Federal Regulations (CFR), Part 139, Certification of Airports, Subpart D (Part 139), may use the standards, practices, and recommendations contained in this AC to comply with the wildlife hazard management requirements of Part 139. Airports that have received Federal grant-in-aid assistance must use these standards. The FAA also recommends the guidance in this AC for land-use planners, operators of non-certificated airports, and developers of projects, facilities, and activities on or near airports.

3. CANCELLATION. This AC cancels AC 150/5200-33A, *Hazardous Wildlife Attractants on or near Airports*, dated July 27, 2004.

4. PRINCIPAL CHANGES. This AC contains the following major changes, which are marked with vertical bars in the margin:

a. Technical changes to paragraph references.

b. Wording on storm water detention ponds.

c. Deleted paragraph 4-3.b, *Additional Coordination.*

5. BACKGROUND. Information about the risks posed to aircraft by certain wildlife species has increased a great deal in recent years. Improved reporting, studies, documentation, and statistics clearly show that aircraft collisions with birds and other wildlife are a serious economic and public safety problem. While many species of wildlife can pose a threat to aircraft safety, they are not equally hazardous. Table 1

ranks the wildlife groups commonly involved in damaging strikes in the United States according to their relative hazard to aircraft. The ranking is based on the 47,212 records in the FAA National Wildlife Strike Database for the years 1990 through 2003. These hazard rankings, in conjunction with site-specific Wildlife Hazards Assessments (WHA), will help airport operators determine the relative abundance and use patterns of wildlife species and help focus hazardous wildlife management efforts on those species most likely to cause problems at an airport.

Most public-use airports have large tracts of open, undeveloped land that provide added margins of safety and noise mitigation. These areas can also present potential hazards to aviation if they encourage wildlife to enter an airport's approach or departure airspace or air operations area (AOA). Constructed or natural areas—such as poorly drained locations, detention/retention ponds, roosting habitats on buildings, landscaping, odor-causing rotting organic matter (putrescible waste) disposal operations, wastewater treatment plants, agricultural or aquaculture activities, surface mining, or wetlands—can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape. Even small facilities, such as fast food restaurants, taxicab staging areas, rental car facilities, aircraft viewing areas, and public parks, can produce substantial attractions for hazardous wildlife.

During the past century, wildlife-aircraft strikes have resulted in the loss of hundreds of lives worldwide, as well as billions of dollars in aircraft damage. Hazardous wildlife attractants on and near airports can jeopardize future airport expansion, making proper community land-use planning essential. This AC provides airport operators and those parties with whom they cooperate with the guidance they need to assess and address potentially hazardous wildlife attractants when locating new facilities and implementing certain land-use practices on or near public-use airports.

6. MEMORANDUM OF AGREEMENT BETWEEN FEDERAL RESOURCE AGENCIES. The FAA, the U.S. Air Force, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture - Wildlife Services signed a Memorandum of Agreement (MOA) in July 2003 to acknowledge their respective missions in protecting aviation from wildlife hazards. Through the MOA, the agencies established procedures necessary to coordinate their missions to address more effectively existing and future environmental conditions contributing to collisions between wildlife and aircraft (wildlife strikes) throughout the United States. These efforts are intended to minimize wildlife risks to aviation and human safety while protecting the Nation's valuable environmental resources.

DAVID L. BENNETT
Director, Office of Airport Safety
and Standards

Table 1. Ranking of 25 species groups as to relative hazard to aircraft (1=most hazardous) based on three criteria (damage, major damage, and effect-on-flight), a composite ranking based on all three rankings, and a relative hazard score. Data were derived from the FAA National Wildlife Strike Database, January 1990–April 2003.[1]

Species group	Ranking by criteria			Composite ranking[2]	Relative hazard score[3]
	Damage[4]	Major damage[5]	Effect on flight[6]		
Deer	1	1	1	1	100
Vultures	2	2	2	2	64
Geese	3	3	6	3	55
Cormorants/pelicans	4	5	3	4	54
Cranes	7	6	4	5	47
Eagles	6	9	7	6	41
Ducks	5	8	10	7	39
Osprey	8	4	8	8	39
Turkey/pheasants	9	7	11	9	33
Herons	11	14	9	10	27
Hawks (buteos)	10	12	12	11	25
Gulls	12	11	13	12	24
Rock pigeon	13	10	14	13	23
Owls	14	13	20	14	23
H. lark/s. bunting	18	15	15	15	17
Crows/ravens	15	16	16	16	16
Coyote	16	19	5	17	14
Mourning dove	17	17	17	18	14
Shorebirds	19	21	18	19	10
Blackbirds/starling	20	22	19	20	10
American kestrel	21	18	21	21	9
Meadowlarks	22	20	22	22	7
Swallows	24	23	24	23	4
Sparrows	25	24	23	24	4
Nighthawks	23	25	25	25	1

[1] Excerpted from the *Special Report for the FAA, "Ranking the Hazard Level of Wildlife Species to Civil Aviation in the USA: Update #1, July 2, 2003".* Refer to this report for additional explanations of criteria and method of ranking.

[2] Relative rank of each species group was compared with every other group for the three variables, placing the species group with the greatest hazard rank for ≥ 2 of the 3 variables above the next highest ranked group, then proceeding down the list.

[3] Percentage values, from Tables 3 and 4 in Footnote 1 of the *Special Report*, for the three criteria were summed and scaled down from 100, with 100 as the score for the species group with the maximum summed values and the greatest potential hazard to aircraft.

[4] Aircraft incurred at least some damage (destroyed, substantial, minor, or unknown) from strike.

[5] Aircraft incurred damage or structural failure, which adversely affected the structure strength, performance, or flight characteristics, and which would normally require major repair or replacement of the affected component, or the damage sustained makes it inadvisable to restore aircraft to airworthy condition.

[6] Aborted takeoff, engine shutdown, precautionary landing, or other.

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